

Laucks

Testing Laboratories, Inc.

940 South Harney Street, Seattle, Washington 98108 (206) 767-5060

Chemistry, Microbiology, and Technical Services



Certificate

CLIENT Alaskan Copper and Brass
3200-6th Avenue South
Seattle, WA 98134
ATTN: Gary Bullard

LABORATORY NO. 83761

DATE March 29, 1984

PO# A-1791

REPORT ON WASTE

SAMPLE IDENTIFICATION Submitted 2/29/84

TESTS PERFORMED AND RESULTS:

A 96-hour static fish bioassay test was performed, using the submitted sample, in accordance with Washington State Department of Ecology regulations.

Results are as shown on attached pages.

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens
J. M. Owens

JMO:bg



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PAGE NO. 2

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96 HOUR STATIC FISH BIOASSAY

Description of Test Set Up

The test was performed in triplicate at each concentration in 10 gallon glass aquaria (8" x 10" x 14") containing 30 liters of water. The water used in the test was tap water with a hardness of about 110 mg/L. Light was provided with fluorescent lamps for 18 hours per day. All test and control aquaria contained 10 organisms. All tanks were aerated during the first 48 hours of the test period; no further aeration was made during the 96 hour test period. The test was started on 03/19/84. The waste was added to the tanks directly.

Information About Test Organisms

Species:	<u>Pimephales promelas</u> (fathead minnow)
Mean Weight:	0.36 grams
Ratio of flesh to water:	0.12 grams/L
Lengths (in mm):	mean 32 longest 40 shortest 30
Ratio (long/short):	1:3
Diseases observed:	None
Disease treatment:	None required
Source of test organisms:	Kurtz Fish Hatchery
History:	Acclimated at least 2 weeks prior to test
Food used:	Wardley's dry flake food for large cichlids

Test Results

Observations of effects or symptoms: No visible stress observed.

Mortalities observed in 30 test organisms:

	<u>Mortalities</u>	<u>%</u>
1000 parts per million	7	23.
100 parts per million	7	23.
control	2	7.



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PAGE NO. 3

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Water chemistry results: mean +/- standard deviation

	<u>1000 ppm</u>	<u>100 ppm</u>	<u>control</u>
Dissolved Oxygen, mg/L	8.0 +/- 0.7	8.0 +/- 0.6	8.0 +/- 0.6
pH	7.4 +/- 0.2	7.4 +/- 0.2	7.3 +/- 0.2
Temperature, °C	22. +/- 0.	22. +/- 0.3	22. +/- 0.3
Hardness, mg/L	140. +/- 4.	140. +/- 7.	130. +/- 5.
Alkalinity, mg/L	25. +/- 1.	25. +/- 1.	25. +/- 2.
Conductivity, micromhos/cm	320. +/- 20.	320. +/- 15.	310. +/- 15.

Test organisms were acclimated at 22°C.

Test Methods Used for Water Chemistry

Dissolved Oxygen	SM*, part 421B
pH	SM*, part 423
Total Hardness	SM*, part 314B
Total Alkalinity	SM*, part 403
Specific Conductance	SM*, part 205

*SM = Standard Methods, 15th edition

Conclusions

Based on an evaluation of test mortalities (corrected for control mortality), this waste would be classified as undesignated waste.



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